

## CIVIL AERONAUTICS JOURNAL



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## Officials Find Airline Shangri La Where Burro Is Only Rival Carrier

Burros are the airplane's only competitors and rains limit travel to 5 months a year along airline routes recently surveyed by Civil Aeronautics Board safety officials.

Robert D. Hoyt, Chief of the Board's Safety Rules and Education Division, and Ralph Reed, Safety Investigator, several weeks ago completed a 20,000-mile circuit of the "American flag" airline stops in South America. They went for a close-up of operations problems in connection with proposed Civil Air Regulations governing our air carriers operating outside the United States. Their travels took them from Texas down through Middle America thence down the west coast of South America, across the continent from La Paz, Bolivia, to Buenos Aires, Argentina, and on up the east coast to San Juan, Puerto Rico and Florida.

### Many Freight Schedules

While all-freight schedules are recent developments on the domestic routes, Hoyt and Reed observed that a substantial number of such schedules, one twice a week from Balboa, C. Z., to Lima, Peru, have been in operation for some time. Other freight lines, particularly in the mountainous regions of Central America have been doing a land-office business for a long time.

The weather, as a rule, is much more stable in the Tropics than in the Temperate Zones, the main seasonal difference being in the amount of rainfall. When it rains all surface travel stops in some parts of the country. One route across Bolivia, known as the "jungle run," extends over the alta plano, a 13,000 foot tableland and down into the dense lowlands to Corumba, Brazil. The last leg of the trip, from Santa Cruz, Bolivia to Corumba, is over

relatively flat country and can be flown in less than 3 hours. Surface travel on this leg is by mules or burros, which take 4 weeks, and the trip can be made only during about 5 months of the year because of flooded rivers and swamps during the wet season.

### Oxygen Use Common

Because so many of the routes in South America are over the mountains use of oxygen equipment is commonplace to passengers. While people are not forced to chew on individual air hoses, the steward regularly checks passenger comfort and will advise any recalcitrant person that failure to do so can result in discomfort upon landing.

Of value to those who are envisioning post-war jaunts to our southern neighbors was Hoyt's observation that to keep from getting lost one must remember how the South American's view of the sun is different from the North American's. Being on the bottom part of the globe, South American's sun, to a North American appears to move backward.

### "Sky-Roads" Exhibit

A public exhibit entitled "Sky-Roads" was opened this month by the CAA, in collaboration with the Museum of Modern Art of New York City. The exhibit will run through December and is being held at the Department of Commerce Building, Washington. It depicts the advance of aviation to the world of today, at the threshold of the air age, by means of maps, charts, globes, models, and photographs.

## The Army Passes Large Percent Of CAA Trainees

More than 85 percent of CAA pilot trainees assigned to the Army Air Forces in the past four months are qualified for advanced flight instruction, according to recent information given the Civil Aeronautics Administration by the AAF.

The trainees, who had been on inactive status as members of the Army's enlisted reserve, and as such had received no pay or uniforms, beginning July 1 were examined by the Army for classification and assignment to active duty in the Army Air Forces. This is the first report on those thus assigned.

Of the 7,028 who have been classified, 1,046 have been selected for combat air-crew training, although they were originally accepted only for instructor or service pilot duty. Their training by CAA while members of the enlisted reserve corps apparently improved their physical condition or academic training sufficiently to enable them to qualify as cadets, Executive Director of Training R. McLean Stewart explained.

Another 4,978 have been placed on active duty and assigned to continue training under CAA-WTS auspices for posts as Army flight instructors.

A total of 962 have been assigned to Air Forces ground crew training, because of failure to meet Air Forces physical standards for fliers, or at their own request. Discharges were given to 42. There remain to be classified 1,300 of the original group.

In addition to the 4,978 men assigned to continue training as instructors, the CAA is supervising the initial flight instruction of about 14,000 Army air crew candidates each month, and has a group of about 3,000 Navy cadets receiving elementary and intermediate flight instruction.

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## Board Grounds Much-flown Pilots For Shenanigans

Recklessness by pilots in the higher grades—swooping on persons on the ground, cavorting around scheduled airliners, doing antics low over cities—has been receiving prompt and decisive attention of the Civil Aeronautics Board. In the last few months a number of certificates, commercial and airline transport, have been revoked, suspended, or restricted for irresponsible flying.

One commercial pilot was grounded for 6 months because he took off without filing a flight plan and flew an Army B25 within 200 feet of an airliner. Another pilot lost his airline transport certificate for twice flying an Army B24D too close to an airliner. And for cutting into the path of an airliner on the ground one fellow had his airline transport certificate restricted for 30 days.

### Plane Skims Highway

For skimming along a highway in Illinois and narrowly missing a head-on collision with a passenger bus, a man lost his commercial certificate. And by diving an Army trainer on some people working in a California field, a pilot relieved himself of an instructor rating and succeeded in getting his commercial certificate restricted.

While an audience usually pays to see the actors, over Mt. Pleasant, Mich., eight performers reversed the practice and paid a good price to put on their act. Formation antics of their planes cost seven of them their instructor ratings and each of them 90-day suspensions of commercial tickets.

Dangerous flying by pilots who should know better was brought to public attention a little over a year ago when an Army bomber ran into an airliner. All 12 persons aboard the airliner perished and the Board's investigation determined that the crash was caused by the "reckless and irresponsible conduct" of the Army pilot "in deliberately maneuvering a bomber in dangerous proximity to the airliner." Most recent nationally noticed incident was the low-altitude "show" with which the pilot of a four-engined plane chilled thousands of spectators at a World Series baseball game in New York City.

### Braniff Adds Moline Stop

The operating certificate of Braniff Airways has been amended to include Moline, Ill., as an intermediate point between Chicago and Burlington, Iowa. In the same order the Board denied the motions of Mid-Continent Airlines and TWA to defer decision in the case. Service to and from Moline will not begin until the national defense no longer requires a delay.

### State Licenses Required

Two of the forty-eight States, Virginia and Connecticut, require State licenses for both aircraft and pilots.

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## Old Army Planes Serve Again In the Schools

Channeling of surplus or obsolete Army airplanes, engines, airframe parts, and instruments to schools teaching aeronautics is the latest service to aviation education by the CAA. Equipment which was cluttering up valuable space at Army depots or being sold for scrap is now moving into classrooms and laboratories for a long and useful "old age."

Requests from 737 schools, in every State but Florida and Arkansas, had been processed at the end of October. As a result of applications made through CAA, the Army has already offered to the schools 226 engines and 59 airplanes, at no charge except the cost of shipping.

The CAA has also arranged the servicing of about 100 similar requests by Navy Department stations.

Application forms for equipment are distributed by CAA through State education authorities, the completed blanks reviewed by CAA, and then turned over to the Army. The CAA review makes sure that the requests are reasonable—one school with 30 aeronautical students, for example, asked for 10 planes.

CAA also has arranged a procedure whereby the schools are informed on weight and shipping point, so they can estimate freight charges. In this way it helps avoid episodes such as occurred before the distribution was put on an organized basis. A school ordered a bomber, and it came, in three cars, along with a staggering freight bill for \$900.

## Woman Pilot Does and Undoes Air Marking Job

Blanche Noyes Rountree, veteran woman pilot and an official of the Civil Aeronautics Administration, finds time in the midst of a very confusing war job to plan a peacetime activity designed to make everything clear for the post-war flier.

It all sounds confusing, and a description of the work she has been doing lately confirms that it is.

### Peacetime Signposts

About seven years ago, Mrs. Rountree was one of the five original women pilot air-marking specialists appointed by the predecessor of the CAA to mark towns and communities for guidance of pilots. The women laid a grill over the map of the country with lines every 15 miles. Then they tried to get a marker as near the intersections of these lines as possible. Thus, they reasoned, any pilot flying cross country would have many signposts to guide him.

Time went by and others of the five original-air markers left the job, but Mrs. Rountree continued. She instigated the placing of thousands of such markers and was feeling proud of the CAA for its successful promotion when the war broke out.

### Out for Duration

Then the CAA was asked to obliterate or screen all markers within the strips 150 miles deep along the coasts, both east and west, to keep the markers from giving aid and comfort to enemy aviators.

Now, with the enemy frustrated, the Army and Navy have become concerned about their own trainees, and have asked the CAA to reverse the field again and put in some more markers, this time in the vicinity of military training centers. At the request of any commanding officer, Mrs. Rountree locates suitable roofs, fields or lawns for installation of the signs which are such welcome sights to lost pilots. These are within 50 miles of the training center, and they will be valuable left-overs when the war ends.

Meanwhile, as she flies about the country—doing all her travel in CAA planes which she pilots—she is planning a post-war program that will equal the original conception of air-marking. Like any other experienced pilot, she has been lost, and she knows that nothing is as welcome in such a circumstance as a friendly sign on a roof below which says, "Jonesville."

Mrs. Rountree doesn't mind the frequency with which war has forced the military to change its mind about air-marking, because she is looking toward the days of popular flying when air-marking will assume life-saving importance.

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# The Americas Are Made Stronger By U. S. Training of 484 Airmen

Successfully fulfilling its mission—that of strengthening Central and South American aviation for hemispheric defense—the first inter-American aviation training program has completed the training of 484 pilots and mechanics and has returned most of them to their homelands where they are contributing to the development of civil and military aviation.

## Ferried Planes Home

The Brazilian trainees were taken directly into the army, some before they had completed their courses here. Many of the Brazilian pilots, upon finishing their training, ferried military aircraft to Brazil from this country. Civilian trainees heard from have jobs with TACA, Panagra, Pan American, and other Central and South American airline companies where they are applying what they've learned.

The first program, started 2 years ago this December, provided training courses for 259 pilots; 17 administrative engineers; 92 instructor mechanics, and 116 service mechanics. After finishing their courses a number of the graduates supplemented their school courses with a period of practical on-the-job training in aviation organizations in this country.

## 121 in Second Program

The second inter-American program is now underway with a group of 121 trainees who have been brought here to take similar pilot and mechanics courses.

Expressing the general sentiment of those selected for training in the second group, Esteban Carles, Panama says: "From the same moment I get my scholarship, I start to be a happy man."

Carles is one of the 72 Latin Americans taking the 2,000-hour course in mechanics at the Spartan School of Aeronautics, Tulsa, Okla. The school is situated on the edge of a large flying field where United States pilots are being trained under the CAA war training program.

Most of the men in this course have had previous experience in servicing aircraft engines, and were chosen on the basis of demonstrated ability and mechanical aptitude. Several were instructors in South American schools.

Among the students is Camile Carasco of Santiago, Chile, who was employed by the LAN, Chilean national airlines, when he received his scholarship. After finishing the course here he hopes to establish a school for aviation mechanics in his own country.

Walter Brockman, Brazilian from Rio de Janeiro, says that it is his aim "to teach to my compatriots the knowledge I will learn in the United States and to work for the greatness of civilian aviation between the Americas."

Paulo Albino Dietzold, 23, another student from Rio de Janeiro, has already had about four years' experience

as an aviation mechanic for an aircraft company in Brazil and expects to return to his job after finishing the course.

The 49 student pilots in the second group are getting their training at Purdue University, West Lafayette, Ind. In the first program, pilot trainees were assigned to 18 different schools.

In the pilot group is Carlos Sá, M. D., of Rio de Janeiro, whose chief interest is aviation medicine. Sá took his first flying lessons in Brazilian flying clubs while he was practicing medicine. After finishing his pilot training course here, he plans to take a course in aeronautical medicine with the end aim in view as that of flight surgeon.

The State Department arranges for the selection of the students who come from almost every country to the south, and the Civil Aeronautics Administration supervises the training courses. The Defense Supplies Corporation is financing the second program. Plans are already underway for a third program which will be financed through the State Department.

## South Americans Come to Learn; Go Home to Work

Who are these South Americans to whom the United States Government has given what the students term as "a chance of a lifetime"? These short background sketches will make you better acquainted with several representative students who have completed their courses here.

### Agustin Arias

Agustin Arias, Quito, Ecuador, who took the instructor mechanics course, called the opportunity to come to the United States for aviation training his "craziest dream come true."

Aviation, he says, was his first love, and he spent his time making planes from crates and old wooden boxes. In deciding upon his career, however, he says that his good mother preferred him for an artist and gave him lessons in expression and piano.

Circumstances arose which deferred Arias' aviation bent. His parents' death cut his schooling short, and he had to get a job. Later he moved away from Quito and flying opportunities. On his return to Quito his mind still pursued the aviation train of thought, but he continued to be frustrated since the only existing flying school had been closed a few months earlier. Finally, after putting in time at social security office work, he was admitted to "Reserva Aerea" flying school. And that is where the scholarship found him "every day flying upon my good homeland."

After finishing his 18 months course in mechanics last June, Arias got the ad-

ditional practical experience he desired through a job at the United Aero Service, Charlotte, N. C., where, as he expressed it, he could work in an aeronautical atmosphere on actual planes and notice and observe a lot so that on his return to his home country he could apply what he had learned.

In September, Arias returned to Quito where he is making good use of his aviation training.

### Francisco Luis Gerin

Francisco Luis Gerin, 30, has also completed the instructor mechanics course and expects to start working for TACA in Central America this month.

Gerin characterizes himself as showing very early a "well-oiled disposition for work." While his young friends were playing he preferred to stay home working and making things. He resisted his father's efforts to make him an architect, he says, because he was mechanically minded and loved everything complicated, in particular, engines.

Gerin's background training has been in the mechanical field. He served as ground mechanic in the air forces of his country, and in another job he was in charge of assembly and test of all makes of gasoline and Diesel engines in a mechanical establishment. He was working as toolmaker preparing tools for precision instruments when he was "gladly surprised" with the award of the U. S. Government scholarship.

In his own words Gerin says, "Since the very first day of the selection made at the American Embassy, I considered myself one of those lucky persons. I saw in my particular case the chance to be able to improve my knowledge and trade far beyond any possibility I would have had in my own country."

After finishing his course, Gerin was employed in a supervisory position at the Lynchburg Air Transport & Sales Corporation to gain an additional period of practical experience, at a salary, incidentally, of \$250 a month.

### Jose Ramirez

Jose J. Ramirez, Colombia, had logged over 1,000 hours as co-pilot when his scholarship gave him a chance to come to the United States for advanced training at the Parkersburg Flying Service in West Virginia. Ramirez finished his course and received his commercial pilot certificate and instructor rating in November 1942. He was offered a post-graduate scholarship for an instrument rating course, but declined in order to take a job with AVIANCA, an airline operating from Colombia to Mexico.

### Joary Correa

Joary Correa, 23, Rio de Janeiro, Brazil, who is now enrolled in the engineering course, has fixed upon airplane design as his chief goal.

He has always looked forward to an education in the United States where he knew he could have the best technical training, since the aeronautical industry has just started in his country.

(See South Americans, page 172)



## Dehydrated Wing Spars Pique Plane Owners, So CAA Counsels Cause and Cure

Cracking of wooden wing spars in airplanes operated in arid regions has become such a maintenance problem that CAA's Safety Regulation Service has issued a release on the subject.

In dry regions numerous airplanes "have developed longitudinal spar cracks in the vicinity of the plywood reinforcing plates," the release states. These cracks result from the tendency of wood to shrink when drying takes place, so the release explains. "The cross-grain portion of the plywood resists this tendency and causes a cross-grain tensile failure in the basic spar."

the manufacturers concerned. The details of such repairs differ for each airplane involved. Recommended repairs involve removal of plywood plates, drilling of stop holes at the ends of cracks, insertion of glue in cracks, changes of bolt pattern in some cases, and the addition of reinforcing plates of combination straight-grain material and plywood.

In view of the possible structural problems involved in repairing cracks, the release recommends that the manufacturer or the nearest CAA aircraft engineering branch be contacted for

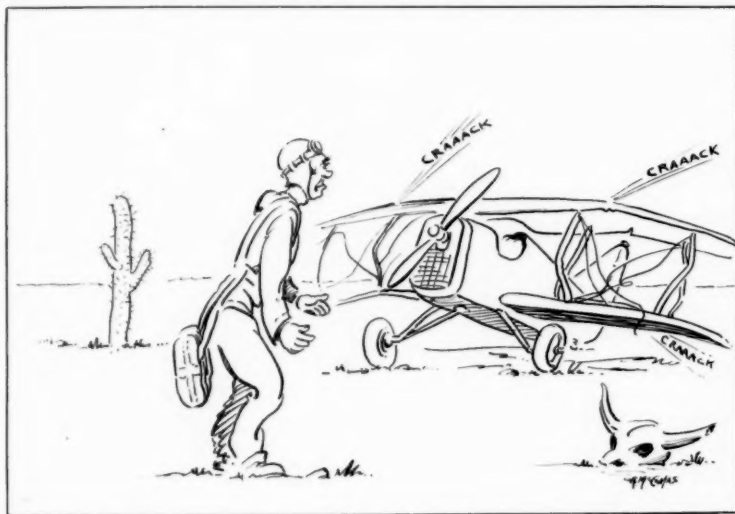
of a spar and their total thickness is less than approximately one-sixth of the total thickness at that point, cracks have not been encountered. On the other hand, a thick plywood plate on only one side of the spar apparently causes no cracks to occur.

Other factors which CAA has found conducive to cracks in the region of plywood plates are poor protective finishes, large cut-outs, and metal fittings which utilize two lines of large diameter bolts. No instances have been found, however, where these three factors alone have caused cracking.

### Cracks Can Be Fixed

CAA counsels that the presence of cracks does not necessarily mean the spar must be discarded. If the crack is not too long or too close to either edge and can be reinforced properly, it will probably be more economical and satisfactory to effect a repair than to install a new spar or section. A crack should not be considered irreparable if the reinforcements used do not cause changes in any portion of the wing drag bracing structure.

Spars and all other wood items in the wings should be inspected periodically for defects due to the adverse effect of arid conditions. Rib gussets, drag wires, bolted fittings and nails attaching ribs to spars have a tendency to loosen because of the wood shrinkage and continued attention may be necessary. Caution should be exercised in the tightening of drag truss wires. If tightened excessively, spar crushing and drag strut failures may occur when the airplane is again operated in regions of higher humidity.



A spar, as defined by the National Advisory Committee for Aeronautics, is "a principal spanwise member of the wing structure of an airplane."—If a plane were headed north, "spanwise members" would run east and west.

Since many planes are continually operated in dry regions, the danger of spar shrinkage is a very real one. If corrective measures are not taken, and cracks continue, wing collapse can occur.

### Artificial Humidifiers

As the release points out, artificial humidifying means have been proposed, such as putting wet sponges or cloth bags filled with water inside of the wings, and in some instances these have prevented cracks. Such methods depend upon adaptability of the wing in question and require constant attention. They are, therefore, considered only temporary expedients at best. One objection to such methods is that the presence of too much moisture may cause the spar to expand to the extent that existing cracks would not be visible or inspection.

Several satisfactory methods of repair for the various airplanes affected have been worked out by CAA's aircraft engineering branch offices and

specific instructions before making repairs not in accordance with the manufacturers' approved instructions or Civil Aeronautics Manual 18, because of the possibility of strength deficiencies.

### How Cracks Develop

Cracks usually start under plywood plates at a bolt hole or cut-out and, in most cases, spread in each direction until they extend a short distance beyond the ends of the plates, where resistance to spar shrinkage disappears.

The Safety Regulation release cites the following example: The three-fourths inch spruce spars in one model airplane have a three-eighths inch plywood plate forty-four inches long on one face and a three-eighths inch plywood plate fourth-four inches long on the other face, these plates being symmetrically located with respect to each other. The cracks which have been found in these spars are on the center line and extend approximately two inches beyond each end of the seventeen inch plates. In some instances, however, the cracks extend much farther.

The amount of plywood at a given point on a spar is a controlling factor. When plywood plates are on both faces

## Government Releases Data On Manufacturing Materials

In order to keep the industry informed of latest developments in the field of structural materials, the Army-Navy-CAA committee on Aircraft Design Criteria has just released an amendment to its report No. 5, "Strength of Aircraft Elements."

The amendment, first since the 1942 edition of the report, will soon be placed on sale by the Superintendent of Documents, Government Printing Office, at a price to be announced in the Journal. Most important change which the amendment covers is that which deals with the permissible use of increased design allowables for certain aluminum alloys. It also contains two new tables covering the design allowable properties of new aged aluminum alloys and some essential changes to the text and tables of the report.

### Asks Permanent Service

The Royal Dutch Air Lines (KLM), a foreign carrier which has been operating in the West Indies under a temporary permit issued by the Civil Aeronautics Board, as applied for a permanent certificate for its route from Willemstad, Curacao, N. W. I., to Miami. KLM has conducted service between these points since August.

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# 19 Applicants Map Air Routes in the Caribbean and South-American Areas

Nineteen applicants have filed with the Board for routes in the Caribbean area, Mexico, Central and South America. Date of the hearings on these applications has been tentatively set for March 15, 1944.

Within the past month or so 10 operating companies have placed their bids for new routes or amendments to present routes along with those already filed by Braniff and Eastern. Additional aspirants are 2 new companies and 5 steamship lines.

## Pan American

Pan American, whose operating lines extend down the east coast of South America, has drawn up plans to cut across the continent with an express trunkline service from Los Angeles to Rio de Janeiro and Buenos Aires via Mexico City, the Canal Zone, Bogota (Colombia) and Manaus (Brazil). A proposed north-south route from Port of Spain to Asuncion would cut directly through the center of the continent via Manaus and Corumba (Brazil). Other service requested includes routes from Mexico City to New Orleans; New Orleans to Havana; and Merida (Mexico) to Houston; stops at Havana on the Miami-Canal Zone line and also on the Puerto Rico-S. A. east coast route; mail service between Port au Prince (Haiti), Santiago (Cuba) and Kingston (Jamaica); substitution of Balboa for Cristobal in the Canal Zone, and inclusion of Sao Paulo as an intermediate point between Rio de Janeiro and Porto Alegre (Brazil).

## Pan American-Grace

Pan American-Grace Airways, a company with 15 years' experience flying between Balboa and Buenos Aires, has applied for amendments to its present routes. Stopping points named on the western coastal route of South America are Guayaquil (Ecuador), Lima (Peru), Antofagasta (Chile) and Cordoba (Argentina). An inside route is mapped from Cali (Colombia) through Iquitos (Peru) and La Paz (Bolivia) to Buenos Aires. The airline has also asked for service from Chiclayo through the Andes to Ramon Castilla near the Peru-Brazilian border via Iquitos; and from Buenos Aires to Montevideo.

## Pennsylvania-Central

Pennsylvania-Central has applied for two routes from Miami through the main islands of the West Indies: one to Port of Spain and the other to Barranquilla (Colombia). The third route from New Orleans to Port of Spain includes stops in Mexico, six Central American countries, the Canal Zone and Colombia and Venezuela. In a fourth route, service is asked from New Orleans to Belize (British Honduras) by way of Havana.

Western Airlines has applied for one route from Los Angeles to Buenos Aires through Mexico City, Guatemala, Balboa, Bogota, Iquitos, Cobija (Brazil), Santa Cruz (Bolivia), and Asuncion (Paraguay). At Asuncion the route branches off into separate lines to Buenos Aires and Rio de Janeiro. A second shorter route is requested from Buenos Aires to Montevideo, and the Brazilian cities of Porto Alegre, Curitiba, Sao Paulo and Rio de Janeiro.

## Chicago and Southern

Chicago and Southern has mapped a route from New Orleans to Rio de Janeiro via Havana, Barranquilla, San Cristobal and Manaus; and another from New Orleans to Buenos Aires via Havana, Balboa, Cali (Colombia) and La Paz.

## National Airlines

National Airlines asks for service between Miami, Tampa, and New Orleans to the South American terminals of Rio de Janeiro, Buenos Aires, Montevideo, and Santiago. The routes requested would extend lengthwise down the east and west coasts and the central part of the continent.

## Caribbean-Atlantic

A Puerto Rican company, Caribbean-Atlantic Airlines, has applied for service from San Juan to Ciudad Trujillo, specifically, and in general for any other routes the Board may deem desirable for linking Puerto Rico with the Continental United States and the other Americas.

## American Airlines

American Airlines asks for a permanent certificate for route FAM 26 which it has operated since September 1942, from Fort Worth-Dallas and El Paso to Mexico City via Monterrey. Application has already been made for inclusion of San Antonio as an intermediate point on the Mexican route.

## Delta Air

Delta Air has applied for service from New Orleans to Havana, Cuba, with the points served on the route left open for Board advisement.

## Southwestern Air

Southwestern Air Lines, a new applicant, proposes express-air freight service of property and goods from St. Louis to Mexico City via Little Rock, Shreveport, Houston and Tampico, in scheduled and nonscheduled service, using both the direct and pick-up methods. Gordons North-South Air Lines, another new applicant, filed in August for transportation of property between Detroit and Buenos Aires.

## American Export

South America is an intermediate stop for American Export Airlines in its

(See Air Routes, page 177)

# Mail Pay Rate for Western, Hawaiian Fixed at .3 Mill

The rate of mail pay has been fixed by the Civil Aeronautics Board at 0.3 mill per pound mile for two more airlines—Western and Hawaiian. The rate is computed on a direct airport-to-airport basis.

The new rate was made uniformly applicable to all of Western's routes which provide service between San Diego, Calif., Salt Lake City, Utah, Great Falls, Mont., and Lethbridge (Alberta), Canada.

Hawaiian Airlines operates 1,311 scheduled miles daily in the territory of Hawaii, between Honolulu and Hilo, and Honolulu and Barking Sands, using three Douglas DC-3's and three Sikorsky S-43 amphibians.

The Board said that Western may be expected to operate with its present passenger and express rates at a profit of 2.11 cents per revenue mile, or \$51,915 a year, before mail pay and Federal income taxes.

While Board Member Harlee Branch dissented from the majority opinion in the Western case on the grounds that the new rate is too high, he concurred for the first time on the 0.3 mill mail pay rate in the case of Hawaiian Airlines.

Hawaiian's estimated net profit on future operations under the new mail pay rate will be 13.22 percent on its mail service investment after Federal income taxes at 40 percent. From combined commercial and mail service it will realize an estimated net over-all profit of 41.61 percent after Federal income taxes. The carrier's previous rate was 25 cents per airplane mile.

Branch agreed that the 13.22 percent profit for Hawaiian seemed fair and reasonable, and cited his previous opinion in the Pennsylvania-Central mail rate case in which he held a net return of 10 percent on the carrier's mail service investment to be fair. To make reasonably sure that the carrier would receive at least a 10 percent return, he advocated that the Board make provision in its estimates for a 15 percent return to allow for vicissitudes in forecasting operating results.

# American Given Stop at Akron

American Airlines has been authorized by the Board to include Akron, Ohio, as an intermediate point between Cleveland and Columbus on route 22.

Direct air service to Akron from points on American's route 22 will benefit a substantial number of persons. No navigational facilities will be required, and the annual operating expenses indicated that the proposed service should be self-sustaining, the Board said. Service to Akron will not begin until the Board notifies the carrier that the national defense no longer requires delay.

## ACCIDENT REPORTS

### Lacking Weather Data, Pilot Flies Into "Soup"

Pilot P. Milo Booser was fatally injured and his passenger, Robert Barefoot, received serious injuries in an accident which occurred near Greensburg, Pa., on May 20, 1943. Booser held a commercial pilot certificate with single-engine land, 0-80 h. p., and flight instructor ratings. He had accumulated approximately 487 hours of flight time, about 300 of which were in the type of aircraft involved. Barefoot, a non-revenue passenger, was not certificated as an airman. The aircraft, a Piper J-4A, was demolished.

Booser received proper clearance for a cross-country contact flight from Booser Airport, Windber, Pa., to Latrobe, Pa., about 40 miles distant. Local weather conditions at the time of departure were: Visibility good, ceiling unlimited, scattered clouds to the west, wind west 5 m. p. h. According to the passenger, the pilot, after adjusting the altimeter to zero, took off, assumed a compass course of 285°, and climbed to an indicated altitude of 3,000 feet. About 15 minutes after their departure they were flying over a solid overcast. The flight continued on the same heading for approximately 30 minutes at which time Pilot Booser said to his passenger, "We will fly another 3 minutes and try to get down through the clouds. My airport (Booser) is 1,000 feet higher than Latrobe Airport (1,240 feet) and that should give us an altitude of 1,000 feet if we descend 3,000 feet." The pilot also told his passenger that all they had to do was observe closely the air speed indicator, altimeter and bank indicator. He then set the stabilizer for a nose-down position and proceeded to descend. The bank indicator remained centered until the altimeter read zero but the plane had not yet broken through the overcast. Informing his passenger that they had better climb, the pilot applied back pressure on the stick and full power. The passenger next felt a sudden sensation of pressure and the plane began losing altitude rapidly. Suddenly the plane broke through the overcast, diving at a high rate of speed and very close to the ground. The pilot pulled up sharply into the overcast and the aircraft was stalled, after which it descended rapidly until it broke through the clouds again and the landing gear struck the tops of trees about 50 feet in height. The plane swerved to the right and crashed to the ground.

Examination of the wreckage revealed no indication of failure of any part of the aircraft prior to the accident. Had the pilot checked the weather along his intended route before departing from Windber, he would have learned that he would encounter a ceiling variable from zero to 50 feet, visibility zero to 300 feet, heavy fog, and a solid overcast extending up to approximately 3,500 feet. Booser Airport is

about 2,500 feet above sea level, while the terrain at the scene of the accident, approximately 10 miles northwest of the Latrobe Airport, is about 1,000 feet above sea level. The aircraft was not equipped for instrument flying and the pilot had had no instrument experience.

**It is evident that the pilot used poor judgment in taking for granted the weather en route and at his destination, and in continuing the flight when instrument weather was encountered.** From the excellent account of the accident by an alert and observant passenger, it is apparent that the pilot stalled and lost control of the aircraft at a low altitude in instrument weather.

### Turbulent Weather, Ice Cause Treetop Landing

Burton B. Benson and his wife were seriously injured in an accident which occurred about 4½ miles northwest of the Municipal Airport, Jacksonville, Tex., at approximately 2:10 p. m. on January 25, 1943. Benson held a private pilot certificate with a single-engine, land 0-80 h. p. rating. He had flown about 120 solo hours. The aircraft, a Taylorcraft BC12-65, was demolished.

Pilot Benson and his wife departed from Paris, Tex., at about 1:00 p. m. on the last leg of a cross-country ferry flight to Jacksonville, Tex. At the time of take-off weather was suitable for contact flight, with a high overcast and good visibility. Benson stated that upon reaching a point about 7 miles north of Jacksonville, the flight encountered a hail and sleet storm and the windshield was suddenly covered with ice. Because of serious engine vibration he closed the throttle, whereupon the engine stopped, necessitating an immediate landing. Looking out the left side window, which he had forced open, Benson found no suitable place for an emergency landing. He put the plane into a glide and landed in the treetops. The aircraft then struck the ground tail first.

Examination of the wreckage disclosed no failure of any part of the aircraft prior to impact. Dual controls were connected. The pilot stated that his ground inspection of the plane indicated that an accumulation of ice on the propeller had caused the vibration.

The unusualness of the weather was attested to by a pilot at the Jacksonville Airport. He stated that about 1:00 p. m. on January 25, the weather appeared suitable for flying; that he left Jacksonville to drive to the airport, a distance of about 3 miles; that before arriving at the airport a slight mist began to fall, followed by hail and rain, and that within 5 minutes the entire countryside was covered with a layer of ice.

**Probable Cause**—An accumulation of ice on the aircraft and propeller, necessitating an immediate landing.

**Contributing Factor**—Sudden and unexpected change in the weather.

### A "Pancake" —With Icing

Milton P. Miller was seriously injured and Student Herbert C. Reich received a minor injury in an accident which occurred about one-half mile east of the Municipal Airport, Dubuque, Iowa, on February 13, 1943. Miller held a commercial pilot certificate with single-engine land 0-330 h. p., and flight instructor ratings. He had accumulated about 1,153 hours of flight time, 523 of which were in the type of airplane involved. Reich, a War Training Service trainee, held a student pilot certificate. The aircraft, a Waco UPF-7, powered by a Continental 220 h. p. engine, received considerable damage. It was owned by Dubuque Airways, Inc.

Instructor Miller and Student Reich received clearance from Dubuque Municipal Airport for a local instruction flight and took off for their assigned practice area. While practicing figure eights at an altitude of about 500 feet, the engine started losing power dropping from 1,800 to 1,500 r. p. m. at full throttle. Miller took the controls, checked the magnetos, and turned the carburetor heat from one-half to the full "on" position, which failed to rectify the trouble. **He stated that since he was unable to gain altitude, he turned back toward the airport, "rather than undertake an emergency landing in a snow-covered field."** On the way back, the engine lost an additional 200 r. p. m., resulting in a steady loss of altitude, and the necessity of an immediate landing became apparent. At an altitude of about 200 feet above the ground, the engine stopped. Directly ahead lay a small "L"-shaped field. However, obstructing the approach were trees, which the instructor stated he cleared, by stretching his glide, with so little speed left that the aircraft "pancaked" to the ground.

During the investigation, the investigator was informed that this was the second time that morning that Miller had had engine trouble with this same aircraft. The first time a landing was effected on the airport. Inspection of the engine after this landing disclosed ice particles over the entire surface of the carburetor air intake screen which prevented the proper amount of airflow to the carburetor and resulted in loss of power. The mechanic stated that the gasolator had been drained prior to the flight which terminated in the accident, and was found to contain some ice in the strainer. It was reported that ice was again found after the accident.

The observed weather at the airport was: Ceiling 3,500 feet, visibility 5 miles; wind northwest 15 m. p. h.; temperature 15° below zero, dew point not known.

**Probable Cause**—Engine stoppage, apparently due to ice, over terrain unsuitable for an emergency landing.



## From Coast to Coast Snow Must Be Watched

Los Angeles and Miami fliers may turn the page—unless they might stray off the reservation some time, for snow is one ground menace which they are unlikely to encounter. However, Atlanta airport has been closed by snowfall, so anything can happen.

In New York State an experienced commercial pilot was demonstrating power landings to a student in a new Waco UPF-7, 220 hp. ship. He tells a sad story. "The runway is rather narrow with patches of ice here and there, and along the edge of the runway there were banks of hard packed snow which had been left by the snowplow. The banks of snow were not deep and I was not careful to stay in the middle of the runway believing that running into the snow would not cause any trouble. Three point contact was made with the ground, the throttle closed. The ship started to swerve to the right on a strip of ice. Left brake was applied but did not take effect quickly enough to keep the ship on the runway. The ship continued into the snow back and nosed over."

Another commercial pilot—a scientific chap with instrument rating and many night flying hours in his log—took his own Stinson 10-A out for a pleasure flight and walked back, fortunately. He makes a brief report, and a good suggestion. "Noted tracks on an auxiliary field where I had trained and which I knew intimately, so decided to land. 'For Old Time's Sake', but the tracks had been made by skis. I landed in deep snow and nosed over. I place the blame on myself in that I did not secure information on the condition of the field or the depth of the snow before attempting a landing there. In my opinion it would be advisable to devise some sort of uniform signal to be placed upon small airports such as the one involved to indicate whether they are usable or not." This was in Colorado.

### Map-Jumping Summaries

Kansas: Attempted take-off in 2 inches of wet snow. Couldn't get off quickly enough. Cut throttle. Applied brakes. Slid into a boundary post.

Illinois: Taxiing back to hanger in snow. Hit a hole and nosed over.

Washington: Taxiing downwind when wheel broke through some ice and ship nosed over.

Pennsylvania: Struck soft spot covered level with snow while taxiing to line. Nosed over.

Massachusetts: Wheels broke through frozen pool of water while taxiing, and ship nosed over.

Alaska: Landed on frozen lake and left wheel broke through the ice, throwing ship into rocky shore.

Montana: Landed in deep snow-covered field to pick up a coyote, but nosed over.

Michigan: Pilot, parking ship, used brake which was ineffective due to ice

## CIVIL AERONAUTICS BOARD

WASHINGTON, D. C.

Safety Bureau Bulletin No. 163

### SNOW ON YOUR AIRPORT

Snow may be beautiful on Christmas cards or out in the wide open spaces, but it is merely one more headache on a landing field. The wise airport manager has his equipment ready in advance to handle this menace. Snow can effectively block an airport from income operations while costs go on as usual.

You have to keep ahead of snow. It is double trouble when it accumulates or freezes. Sometimes rolling will make a snow-covered field temporarily usable, but the packed snow has to thaw some time and then it may give with the bumps. The best solution, when equipment permits, is to melt it or to move it bodily away. Scraping it into piles or windrows makes additional hazards on the field, but when this is absolutely necessary such piles should be adequately marked with flags and lights. These and all other lights on an airport must be kept uncovered and in a constant state of efficiency—which in itself is a considerable job in a snow-storm.

The airport manager, pilot, and ground crewmen, must always regard snow and freezing weather with suspicion. Loose stones or hard instruments should be removed from runways before a freeze or they may become keen tire cutters when points protrude from a frozen surface. Severe tire damage may also be caused by frozen ruts. Wheel chocks and tools are easily misplaced in bad weather and can become quickly hidden by a covering of snow. Such blind hazards have caused serious accidents when hit by taxiing craft.

In freezing weather it is the airport operator's responsibility to make frequent checks on the condition of the runways, and to close the airport as soon as it becomes dangerous for use. The retarding effect of soft snow on take-offs may result in normally adequate runways proving too short. Wet snow or splashed slush may freeze in the wheels or undercarriage and cause disaster. Ice and slush create skidding hazards.

No aircraft should be allowed to leave the ground in freezing weather until it is certain that there is no snow or coating of frost, or water which may freeze upon the wings, since the flying characteristics of an aircraft may be materially altered thereby. Indeed, there is a great additional responsibility involved when you have snow on your airport.

### Sympathy—But Socko!

No use mentioning his name. He says he'll never do it again. A pilot-mechanic in the mid-West was working into the night to complete some engine repairs on a ship, because he wanted to leave on a long awaited trip to his home early the next morning. Repairs completed, he took the ship up to an altitude of 600 feet for a 15-minute test flight, and returned to the field. Perhaps nobody would have known of his CAR violations, such as flying after darkness; without lights; etc., except that in landing he had the misfortune to hit an old pile of frozen snow with the landing gear. It cost him the vacation, \$500 for repairs to the ship, and a 30-day suspension of his pilot's license. He hates snow.

### —Little Sympathy Here, tho

Out on Long Island a student pilot took off with a passenger who was also a student pilot. They flew over three other airports where they were known, and "put on a show" by diving and zooming and flying below the level of wires. The whole wild flight was reported by the various elements of aircraft spotters to the Interceptor Command in New York City, so they had no chance of escaping the penalty of their foolhardiness and brazen violation of several Civil Air Regulations. BUT, in addition to all this, there was a covering of snow on the airport when they came down, and the landing gear struck a snow-concealed obstruction, damaging the ship to the extent of a major assembly job. They blame foolishness for their first trouble, and SNOW for double trouble.

on ground. Slid into parked Porter-field.

Illinois: Crossed icy spot while taxiing and skidded into fence post.

New Jersey: Struck frozen rut while taxiing on airport.

Idaho: Landed on unsuitable terrain covered with wet snow. Nosed over.

# DOMESTIC AIR CARRIER STATISTICS

Operations for September 1943

Operator	Routes operated	Revenue miles flown	Revenue passenger-carrying	Revenue passenger-miles flown	Express carried (pounds)	Express pound-miles flown	Passenger seat-miles flown	Revenue passenger load factor (percent)
All American Aviation, Inc.	Pittsburgh-Jamestown, Huntington, Williamsport, Philadelphia, via Harrisburg.	90,101	0	0	19,128	2,839,864	0	-----
American Airlines, Inc.	Dallas-Los Angeles	666,116	14,213	11,479,205	186,840	184,346,545	12,073,462	95.00
	New York-Chicago	413,196	19,508	6,997,282	763,135	313,086,463	7,538,613	92.82
	Boston-New York	100,968	10,486	1,803,740	249,938	39,707,232	2,001,403	90.12
	Boston-Cleveland	19,350	2,221	330,950	57,128	10,681,053	392,019	84.42
	Cleveland-Nashville	59,014	4,940	1,064,981	121,585	30,693,543	1,210,920	87.95
	New York-Fort Worth	651,148	17,888	10,572,163	380,027	198,449,950	11,515,803	91.81
	Washington-Chicago	159,858	6,453	2,542,048	140,666	64,770,503	2,859,771	88.89
	Chicago-Fort Worth	112,023	4,200	1,910,756	93,390	57,555,397	2,115,832	90.31
	Buffalo-Toronto	4,560	838	63,688	4,107	312,132	94,924	67.09
	El Paso or Ft. Worth-Mexico City	123,956	1,863	1,767,069	17,007	15,041,188	2,148,708	82.33
	Total	2,310,189	82,610	38,531,882	2,013,823	914,644,006	41,951,455	91.85
Braniff Airways, Inc.	Chicago-Dallas	213,098	6,708	3,792,929	97,461	64,807,289	4,020,955	94.33
	Denver-Brownsville	150,883	8,645	2,532,870	36,134	9,701,598	2,763,683	91.65
	San Antonio-Laredo	6,672	410	61,500	271	37,669	144,000	42.71
	Total	370,653	15,763	6,387,299	133,866	74,546,556	6,928,638	92.19
Chicago & Southern Air Lines, Inc.	Chicago-New Orleans	163,287	5,878	2,838,304	78,108	29,322,093	3,169,478	89.55
	Memphis-Houston	29,390	1,522	489,652	7,840	3,287,308	562,176	87.10
	Total	192,677	7,400	3,327,956	85,948	32,609,401	3,731,654	89.18
Continental Air Lines, Inc.	Denver-El Paso	95,410	3,134	958,415	9,395	4,277,705	1,083,632	88.44
	Pueblo-Tulsa	38,026	1,614	379,215	2,773	416,998	425,021	89.22
	Total	133,436	4,748	1,337,630	12,168	4,694,703	1,508,653	88.66
Delta Air Corporation	Charleston and Savannah-Fort Worth	188,053	8,704	3,307,734	30,311	11,905,361	3,907,473	84.65
	Atlanta-Cincinnati	44,314	2,655	871,956	21,142	6,946,428	922,637	94.51
	Total	232,367	11,359	4,179,690	51,453	18,851,789	4,830,110	86.53
Eastern Air Lines, Inc.	New York-San Antonio	395,075	13,058	7,213,823	131,375	66,763,526	7,978,983	90.41
	New York-Miami	502,000	13,307	7,319,929	168,446	129,518,428	9,177,459	79.76
	Chicago-Jacksonville	165,416	7,031	3,028,130	78,406	34,600,760	3,264,353	92.76
	Atlanta-Tampa	23,275	1,164	411,580	9,559	3,539,780	488,775	84.21
	Total	1,085,766	34,560	17,973,462	387,766	204,422,494	20,909,570	85.96
Inland Air Lines, Inc.	Denver-Great Falls	47,806	1,262	378,942	1,213	375,827	549,759	68.93
	Cheyenne-Huron	18,664	0	0	8	2,025	0	-----
	Total	66,470	1,262	378,942	1,221	377,852	549,759	68.9
Mid-Continent Airlines, Inc.	Minneapolis-Tulsa	86,142	3,007	843,658	16,976	4,106,622	1,100,383	76.67
	Minneapolis-Des Moines, St. Louis and Kansas City	75,240	1,663	474,560	6,614	1,788,123	959,523	49.46
	Total	161,382	4,670	1,318,218	23,590	5,894,745	2,059,906	63.99
National Airlines, Inc.	Jacksonville-Miami	72,780	3,552	843,661	8,299	1,828,915	1,018,920	82.80
	Jacksonville-New Orleans	121,692	4,021	1,415,913	20,081	11,191,184	1,685,949	83.98
	Total	194,472	7,573	2,259,574	28,380	13,020,099	2,704,869	83.54
Northeast Airlines, Inc.	Boston-Presque Isle and Moncton	74,264	4,137	1,063,071	15,803	2,774,265	1,559,544	68.17
Northwest Airlines, Inc.	Chicago-Seattle	455,317	13,295	7,554,515	151,914	92,574,320	8,347,704	90.50
	Minneapolis-Duluth	7,725	0	0	1,022	146,146	0	-----
	Total	463,042	13,295	7,554,515	152,936	92,720,466	8,347,704	90.50
Pennsylvania-Central Airlines Corp.	Norfolk-Detroit	225,436	19,859	4,066,543	373,207	65,394,331	4,708,121	86.33
	Detroit-Milwaukee	15,000	1,708	283,506	26,485	4,582,272	327,600	86.54
	Pittsburgh-Buffalo	13,080	1,123	218,804	15,992	2,704,848	274,680	79.66
	Pittsburgh-Birmingham	35,711	1,711	576,205	4,805	1,446,358	748,510	76.98
	Total	289,227	24,401	5,145,058	420,489	74,127,809	6,058,911	84.92
Transcontinental & Western Air, Inc.	New York-Los Angeles	1,003,849	25,509	17,207,779	557,815	317,334,848	18,020,641	95.49
	Dayton-Chicago	30,360	2,192	519,786	118,026	33,282,241	563,997	92.16
	Boulder City-San Francisco	42,606	1,372	693,476	11,170	6,290,562	1,020,518	67.95
	Kansas City-Pittsburgh via Chicago	278,492	8,348	4,519,018	197,612	99,807,566	4,732,765	95.48
	St. Louis-Detroit via Cincinnati and Dayton	67,243	4,998	1,131,789	83,223	16,541,258	1,358,089	83.34
	Washington-Dayton via Columbus	47,350	2,125	749,127	46,128	15,240,007	847,420	87.34
	Total	1,469,900	44,544	24,811,975	1,013,974	488,496,482	26,543,430	93.48
United Air Lines Transport Corp.	New York-San Francisco	1,336,567	24,312	23,485,084	753,721	585,109,834	24,515,029	95.80
	Salt Lake-Seattle	97,087	3,130	2,025,255	31,674	19,732,785	2,193,463	92.33
	Seattle-San Diego	395,559	19,442	7,414,827	133,078	53,785,108	7,827,307	94.73
	Seattle-Vancouver	15,360	2,105	270,434	5,357	675,868	319,744	84.58
	Toledo-Washington	47,199	1,287	927,765	18,613	7,322,425	971,333	95.51
	Total	1,891,772	50,276	34,123,365	942,443	666,626,020	35,826,876	95.27

See footnotes at end of table.



# Operations for September 1943—Continued

Operator	Routes operated	Revenue miles flown	Revenue passengers carried	Revenue passenger miles flown	Express carried (pounds)	Express pound-miles flown	Passenger seat-miles flown	Revenue passenger load factor (percent)
Western Air Lines, Inc.	San Diego-Salt Lake City	147,700	6,255	2,685,966	77,442	35,422,622	3,011,297	89.20
	Salt Lake City-Great Falls	32,052	1,137	415,881	2,739	1,010,423	506,587	82.09
	Great Falls-Lethbridge	8,764	481	67,079	1,543	230,386	129,172	51.93
	Total	188,516	7,873	3,168,926	81,744	36,663,431	3,647,056	86.89
	Grand Total	9,214,834	314,471	151,561,563	5,384,732	2,663,309,982	167,158,135	90.67

Passengers carried (total revenue and non-revenue) 321,616; passenger miles flown (total revenue and non-revenue) 153,980,314.

Where a company operates more than one route, the passengers carried may be duplicated between routes.

Correction to June, 1943, report (published in September 15 issue of Journal)

Pennsylvania-Central Airlines Corporation

Chicago & Southern Air Lines, Inc.

Express pound miles flown

Pittsburgh to Buffalo... 1,623,270

Total... 34,063,678

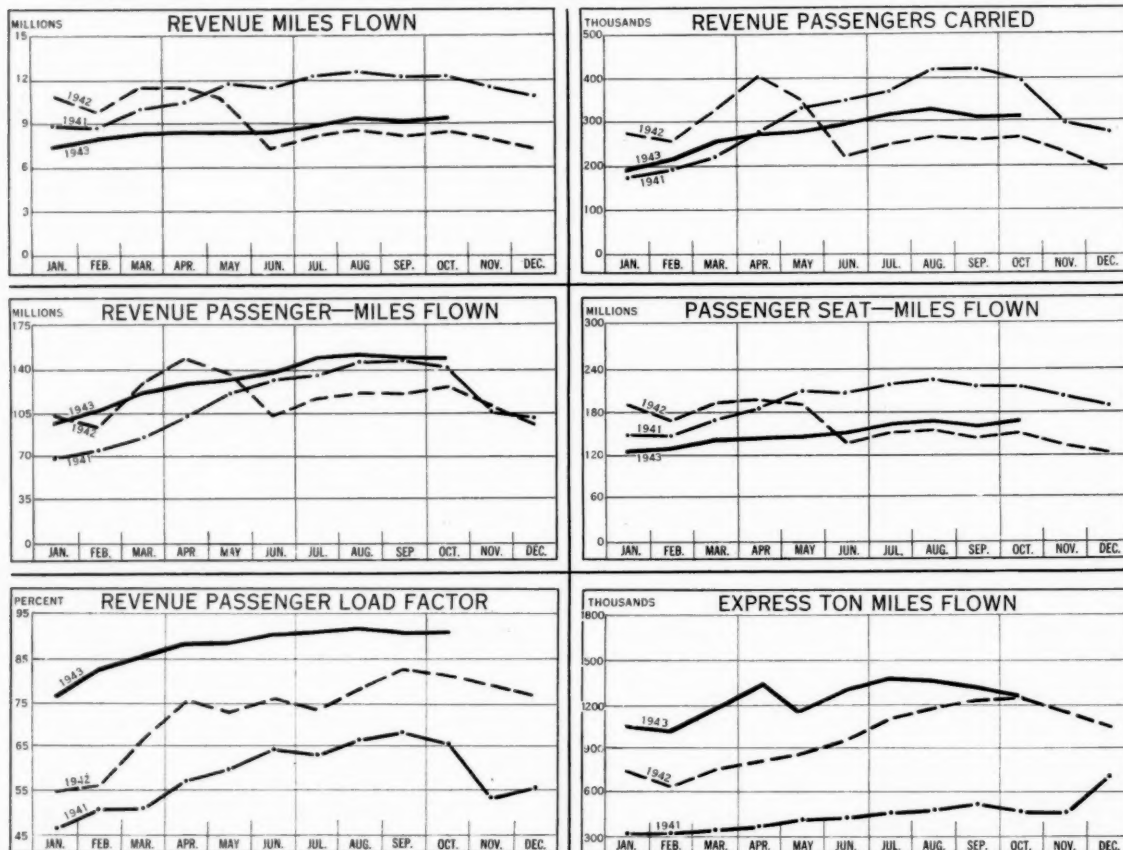
## Operations for the First Nine Months of 1943 as Compared With the Same Period of 1942

Operator	Revenue miles flown January-September		Revenue passengers carried January-September		Revenue passenger miles flown January-September		Express carried (pounds) January-September	
	1943	1942	1943	1942	1943	1942	1943	1942
All American Aviation, Inc.	772,894	630,258	0	0	0	0	113,752	82,047
American Airlines, Inc.	19,661,006	21,626,604	694,984	801,802	327,309,307	306,745,343	15,343,020	8,111,447
Braniff Airways, Inc.	2,950,676	3,431,924	124,926	115,443	48,043,350	37,919,253	1,038,559	762,216
Catalina Air Transport	0	41,924	0	8,684	0	0	0	64,088
Chicago & Southern Air Lines, Inc.	1,631,765	1,711,513	65,161	56,700	26,027,572	21,475,702	630,212	497,559
Continental Air Lines, Inc.	1,146,946	1,273,668	39,289	27,432	11,138,441	7,260,463	90,943	64,077
Delta Air Corporation	1,628,440	1,896,821	81,539	83,056	30,224,866	24,817,484	429,592	207,569
Eastern Air Lines, Inc.	9,851,455	13,053,029	302,142	393,298	159,711,461	171,128,479	3,260,418	2,934,010
Inland Air Lines, Inc.	624,689	817,815	8,996	9,359	2,937,884	2,564,473	19,382	31,568
Mid-Continent Airlines, Inc.	1,000,302	1,254,247	24,652	22,474	6,827,127	6,085,848	122,688	85,625
National Airlines, Inc.	1,325,762	1,147,070	32,358	39,900	15,807,251	11,007,423	242,305	162,433
Northeast Airlines, Inc.	514,660	634,740	26,660	21,137	6,635,259	4,177,903	76,258	69,492
Northwest Airlines, Inc.	3,106,374	3,792,002	84,789	91,180	43,499,968	41,385,413	1,118,846	826,942
Pennsylvania-Central Airlines Corporation	2,216,260	3,489,404	176,041	219,416	37,599,422	45,404,024	3,144,475	1,733,690
Transcontinental & Western Air, Inc.	11,870,891	12,868,902	323,860	310,905	176,740,173	151,303,549	7,777,741	4,835,579
United Air Lines Transport Corporation	15,866,971	17,082,319	401,363	400,946	259,882,279	218,586,704	7,634,480	6,715,286
Western Air Lines, Inc.	1,462,722	1,874,754	58,586	57,457	23,212,462	18,428,446	707,498	969,940
Total	75,631,813	86,626,994	2,465,346	2,659,189	1,175,566,822	1,071,754,027	41,770,169	28,153,568
Index (1942=100)	87.31	100.00	82.71	100.00	109.69	100.00	148.37	100.00

Operator	Express pound miles flown January-September		Passenger seat miles flown January-September		Revenue passenger load factor (percent) January-September	
	1943	1942	1943	1942	1943	1942
All American Aviation, Inc.	15,664,605	8,778,100	0	0	87.87	73.45
American Airlines, Inc.	7,212,695,308	4,103,610,999	372,511,690	421,727,490	91.59	63.64
Braniff Airways, Inc.	534,661,694	275,212,694	52,453,171	59,585,228	88.68	59.88
Catalina Air Transport	0	2,011,530	0	379,320	83.06	55.32
Chicago & Southern Air Lines, Inc.	275,163,051	199,105,569	31,335,938	35,871,846	88.68	71.06
Continental Air Lines, Inc.	32,098,402	19,399,045	12,842,376	13,124,327	86.57	68.03
Delta Air Corporation	164,820,101	76,831,580	34,832,753	34,922,381	65.13	33.38
Eastern Air Lines, Inc.	2,020,006,748	1,795,269,601	184,497,253	251,548,551	62.47	43.49
Inland Air Lines, Inc.	4,734,079	5,784,850	4,510,965	7,682,588	61.44	34.27
Mid-Continent Airlines, Inc.	28,839,283	20,233,120	10,928,236	13,994,252	83.63	64.39
National Airlines, Inc.	69,304,293	43,074,702	18,457,753	15,497,436	80.06	67.91
Northeast Airlines, Inc.	15,606,298	18,198,982	10,800,107	12,189,518	91.50	80.84
Northwest Airlines, Inc.	737,298,343	626,421,877	51,979,758	65,316,141	85.41	59.01
Pennsylvania-Central Airlines Corporation	569,861,288	343,374,758	46,036,249	70,513,933	87.72	70.20
Transcontinental & Western Air, Inc.	4,443,708,320	3,136,085,270	198,449,650	222,791,908	124.96	100.00
United Air Lines Transport Corporation	5,812,848,179	5,428,307,746	284,011,884	270,382,318		
Western Air Lines, Inc.	318,312,998	431,118,349	27,178,815	31,229,844		
Total	22,255,622,990	16,532,818,742	1,340,076,578	1,526,757,081		
Index (1942=100)	134.61	100.00	87.77	100.00		

	January	February	March	April	May	June	July	August	September	Total
Passengers carried (total revenue and non-revenue)	208,380	233,049	265,175	280,913	282,103	297,760	320,096	338,059	321,616	2,547,151
Passenger miles flown (total revenue and non-revenue)	101,410,602	110,982,551	124,256,467	132,894,531	133,266,615	140,745,710	150,013,387	156,873,457	153,980,314	1,204,513,634

## Comparative Charts of Domestic Operations for 1941, 1942, and the First 10 Months of 1943



### South Americans

(Continued from page 165)

He says, however, that Brazil has recently established several airplane factories, and designing planes promises to be a vast new field in Brazilian industry, toward which he hopes to be able to contribute his share when he returns.

Correa, a versatile person with ambitions in the engineering field, started work at 16 and put himself through a two-year engineering course in Brazil by jobs in a bank, and with a transportation company, and by writing for newspapers and magazines, editing a magazine, and writing a book.

He has a job already laid out for him as an engineer in a Brazilian airplane factory when his course is completed.

### Department Store Applies

Thalhimer Bros., a department store in Richmond, Va., has applied to the Board for authorization to transport persons and property out of Richmond. Wm. Filene's Sons, Boston, Mass., is an earlier department store applicant contemplating delivery of packages by air from Boston to New England points.

### 40th Anniversary For Air Machine

Forty years ago on December 17 aviation was born when the first successful powered flight was made by Orville and Wilbur Wright at Kitty Hawk, N. C. But it was almost 5 years before an hour of flying could be logged.

After many earlier shorter flights, Orville Wright on September 9, 1908, made the first powered flight of over an hour—just 7 years after a mathematics teacher at the Naval Academy had prophesied "The first successful flier will be the handiwork of a watchmaker and will carry nothing heavier than an insect. . . . I have shown that the construction of an aerial vehicle which could carry even a single man from place to place at pleasure requires the discovery of some new metal or some new force." (Aluminum was discovered in 1828.)

### Airport Planning Aid

"Low Visibility Airport Windrose Summaries" issued in 1940 as technical development note No. 22, may be obtained from the Publications and Statistics Division, CAA, upon showing of a bona fide interest. The publication gives detailed information on wind and climatic conditions during periods of restricted visibility and includes charts for all airports on which this data has been gathered. The information is valuable for the planning of new airport runways, runway extensions, instrument landing systems, and other air navigation facilities so that they may be used to best advantage for bad-weather approaches and landings.

### Hughes Asks TWA Control

The Hughes Tool Co., owned by Howard R. Hughes, Houston, Tex., has applied to the Civil Aeronautics Board for control of TWA. The Hughes corporation now owns 440,050 shares (45.6 percent) of the 965,083 shares of TWA. The company, which manufactures oil-field equipment, also produces aircraft under the department of the Hughes Aircraft Co.

# OFFICIAL ACTIONS . . . Civil Aeronautics Board

## Orders

No. 2491..... October 28, 1943

Amended certificate of public convenience and necessity issued to Pennsylvania-Central Airlines Corporation so as to include Baltimore, Md., as an intermediate point between the intermediate points Washington, D. C., and Pittsburgh, Pa.

No. 2492..... October 30, 1943

Extended effective period of temporary foreign air carrier permits issued to certain airlines (No. 2252) so as to determine the need for additional temporary air transportation in the Caribbean area.

No. 2493..... November 2, 1943

Amended certificate of public convenience and necessity issued to Transcontinental & Western Air, Inc., so as to include Lancaster, Pa., as an intermediate point between the intermediate points Reading and Harrisburg, Pa. on route No. 2.

No. 2494..... November 2, 1943

Denied application of Eastern Air Lines, Inc., for a certificate to provide air transportation between Memphis, Tenn., and Greenville, S. C. (Opinion & Order).

No. 2495..... November 3, 1943

Revoked student pilot certificate held by Lowrey C. Woosley for certain violations of the Civil Air Regulations.

No. 2496..... November 3, 1943

Revoked student pilot certificate held by Bobby J. Bray for certain violations of the Civil Air Regulations.

No. 2497..... November 3, 1943

Revoked student pilot certificate held by Lawrence M. DeGrott for certain violations of the Civil Air Regulations.

No. 2498..... November 3, 1943

Temporarily suspended mechanic certificate, with aircraft and aircraft engine ratings, held by William L. Schade for certain violations of the Civil Air Regulations.

No. 2499..... November 3, 1943

Dismissed complaint against Ernest A. Tatum, holder of student pilot certificate.

No. 2500..... November 2, 1943

Denied petition of National Airlines Inc., requesting reconsideration and deferment of the action of the Board as set forth in No. 2440; denied request for oral argument.

No. 2501..... November 3, 1943

Authorized taking of depositions re Ralph D. Korngold holder of mechanic certificate with aircraft and engine ratings.

No. 2502..... November 3, 1943

Further consolidated for public hearing applications of certain airlines for certificates and amendments of existing

certificates under section 401 of the Civil Aeronautics Act of 1938.

No. 2503..... November 4, 1943

Instituted proceeding (Docket 1142) to determine whether Birmingham, Ala., be named as an intermediate point on any route which may be certificated between Atlanta, Ga., and Memphis, Tenn., and that the City of Birmingham be made a party to this proceeding; severed and assigned dockets re applications of various airlines concerning certificates over certain routes.

No. 2504..... November 5, 1943

Limited time in which Chester Raymond Dickson may file an answer to the complaint against him.

No. 2505..... November 5, 1943

Limited time in which Bay Cities Fliers may file an answer to the complaint against them.

No. 2506..... November 6, 1943

Granted permission to American Airlines, Inc., Wilson McCarthy and Henry Swan, trustees for the Denver and Rio Grande Western Railroad Co., and the Rio Grande Motor Way, Inc., to intervene re certificates of applications of certain airlines concerning certificates.

No. 2507..... November 8, 1943

Denied motion of Western Air Lines, Inc. to withhold from public disclosure stock purchase agreement filed in connection with their application to acquire control of Inland Air Lines, Inc. (Docket No. 1106).

No. 2508..... November 6, 1943

Consolidated applications of various airlines for certificates and amendments of certificates under section 401 of the Civil Aeronautics Act of 1938.

No. 2509..... November 8, 1943

Temporarily suspended commercial pilot certificate and revoked flight instructor rating held by John Barnett for certain violations of the Civil Air Regulations.

No. 2510..... November 8, 1943

Temporarily suspended commercial pilot certificate and revoked flight instructor rating held by Albert J. Rogers for certain violations of the Civil Air Regulations.

No. 2511..... November 8, 1943

Temporarily suspended commercial pilot certificate and revoked flight instructor rating held by Arnold Otterbacher for certain violations of the Civil Air Regulations.

No. 2512..... November 8, 1943

Temporarily suspended commercial pilot certificate and revoked flight instructor rating held by Wayne B. Struble for certain violations of the Civil Air Regulations.

No. 2513..... November 8, 1943

Temporarily suspended commercial

pilot certificate and revoked flight instructor rating held by Ford Trucks for certain violations of the Civil Air Regulations.

No. 2514..... November 8, 1943

Temporarily suspended commercial pilot certificate and revoked flight instructor rating held by Robert L. Ballard for certain violations of the Civil Air Regulations.

No. 2515..... November 9, 1943

Amended order No. 609-715 re restriction of airline transport pilot certificate held by Leland H. Cameron.

No. 2516..... November 8, 1943

Temporarily suspended flight instructor ratings of Harry Coppus, Floyd Ford, and Roy Rude; revoked flight instructor rating of Nick Jankovich for falsely certifying solo time flown by trainees in a War Training Service program. (Opinion and order).

No. 2517..... November 9, 1943

Extended effective period of the temporary permits held by Royal Dutch Air Lines (KLM) and Expreso Aereo Inter-Americano, S. A., for temporary air transportation in the Caribbean Area.

No. 2518..... November 4, 1943

Directed Colonial Airlines, Inc., to show cause why the Board should not make final the findings and conclusions re compensation for the transportation of mail over FAM route No. 1 and upon the basis thereof enter an order denying respondent's petition, filed Feb. 2, 1943; ordered that this order be served upon Colonial Airlines, Inc.

No. 2519..... November 12, 1943

Amended in its entirety the Uniform System of Accounts for Domestic Air Carriers and substituted therefor a new printed manual.

No. 2520..... November 12, 1943

Authorized Eastern Air Lines, Inc., to inaugurate service on routes Nos. 5 and 6 so as to serve the intermediate points Raleigh, N. C., and Columbia, S. C.

No. 2521..... November 12, 1943

Withheld from public disclosure certain testimony and exhibits re alteration, amendment, and modification of the certificate of Pan American-Grace Airways, Inc.

No. 2522..... November 13, 1943

Assigned for oral argument proceeding re Horn's Flying School, Inc.

No. 2523..... November 10, 1943

Authorized taking of depositions so as to determine whether the mechanic certificate held by Ralph D. Korngold should be suspended or revoked.

No. 2524..... November 15, 1943

Granted petition of Northwest Airlines, Inc., to allow R. E. Evans to apply for an aircraft dispatcher certificate any time prior to January 1, 1944.



No. 2525..... November 15, 1943  
Suspended flight instructor rating held by George Law until he passes the flight test required for a flight instructor rating.

No. 2526..... November 15, 1943  
Revoked student pilot certificate held by Dana H. Roe for certain violations of the Civil Air Regulations.

No. 2527..... November 15, 1943  
Revoked student pilot certificate held by Arthur S. Vinyard for certain violations of the Civil Air Regulations.

No. 2528..... November 8, 1943  
Fixed the rate of compensation for the transportation of mail by Western Air Lines, Inc., over routes Nos. 13, 19, and 52.

No. 2529..... November 15, 1943  
Amended certificate authorizing American Airlines, Inc., to engage in air transportation over route No. 22 so as to include Akron, Ohio, as an intermediate point between the intermediate points Cleveland and Columbus, Ohio. (Eff. Nov. 15, 1943).

No. 2530..... November 16, 1943  
Authorized the taking of depositions re Robert R. Watson, Jr.

No. 2531..... November 18, 1943  
Denied Chicago, Black Hills, and Western Air Lines permission to intervene re application of Western Air Lines, Inc., for approval of the acquisition of control by Western Air Lines, Inc., of Inland Air Lines, Inc., and approval of the merger of Inland Air Lines, Inc., into Western Air Lines, Inc., or the purchase by Western Air Lines, Inc., of all the assets of Inland Air Lines, Inc.

No. 2532..... November 18, 1943  
Permitted immediate inauguration of nonstop service by Transcontinental & Western Air, Inc., between Los Angeles and San Francisco, Calif., on route No. 37.

No. 2533..... November 18, 1943  
Ordered that on and after February 1, 1943, the rate of compensation for the transportation of mail over Route No. 33 by Hawaiian Airlines, Ltd., shall be 0.3 mill per pound mile of mail carried.

No. 2534..... November 18, 1943  
Amended certificate issued to Braniff Airways, Inc., so as to include Moline, Ill., as an intermediate point between Chicago, Ill., and Burlington, Iowa; denied motions of Mid-Continent Airlines, Inc., and Transcontinental & Western Air, Inc., to defer decision in this case. (Opinion and order.)

No. 2535..... November 19, 1943  
Temporarily suspended mechanic certificate held by Edward Hettich for violation of the Civil Air Regulations.

No. 2536..... November 19, 1943  
Revoked student pilot certificate held by Robert C. Harris for certain violations of the Civil Air Regulations.

No. 2537..... November 19, 1943  
Amended Board Order No. 609-689 so as to revoke commercial pilot certificate held by James A. D'Ostroph.

No. 2538..... November 22, 1943  
Granted the City of Topeka, Kans., permission to intervene re applications of Transcontinental & Western Air, Inc., Braniff Airways, Inc., and Continental Air Lines, Inc., for certificates and amendment of certificates under Sec. 401 of the Civil Aeronautics Act of 1938.

No. 2539..... November 22, 1943  
Approved Agreement (Contract CAB No. 255) filed by and between United Air Lines Transport Corporation and Mid-Continent Airlines, Inc., relating to the furnishing of certain services, facilities, and personnel, by United Air Lines Transport Corporation to Mid-Continent Airlines, Inc.

No. 2540..... November 22, 1943  
Temporarily suspended commercial pilot certificate held by Merle E. Glasgow for violation of the Civil Air Regulations.

No. 2541..... November 22, 1943  
Revoked student pilot certificate held by Jumell Ritchie for certain violations of the Civil Air Regulations.

No. 2542..... November 22, 1943  
Assigned for oral argument proceeding re Horn's Flying School, Inc.

No. 2543..... November 19, 1943  
Suspended for 90 days student pilot certificate of Louis J. Marcucelli for certain violations of the CAR's. (Opinion and Order.)

No. 2544..... November 24, 1943  
Temporarily suspended commercial pilot certificate held by Sigvald D. Elde for certain violations of the Civil Air Regulations.

No. 2545..... November 24, 1943  
Temporarily suspended student pilot certificate held by Nicholas J. Morohovich for certain violations of the Civil Air Regulations.

No. 2546..... November 24, 1943  
Approved agreement filed by and between United Air Lines Transport Corp. and Railway Express Agency, Inc. relating to air express service. (C. A. B. No. 82 A, amending C. A. B. No. 82.)

No. 2547..... November 24, 1943  
Authorized Mid-Continent Airlines, Inc. to temporarily suspend service at St. Joseph, Mo.

No. 2548..... November 25, 1943  
Temporarily exempted Braniff Airways, Inc., from the provisions of section 401 (a) of the Civil Aeronautics Act of 1938, as amended, insofar as they would prevent them from temporarily engaging in air transportation to and from Nuevo Laredo, Mexico, as a terminal with Laredo, Tex., on its route No. 50.

No. 2549..... November 25, 1943  
Withheld from public disclosure certain exhibits re acquisition of control

by Western Air Lines, Inc., of Inland Air Lines, Inc.

No. 2550..... November 26, 1943  
Authorized taking of depositions re Maynard T. Craig, holder of mechanic certificate.

No. 2551..... November 26, 1943  
Denied petitions of Chicago & Southern Air Lines, Inc., Braniff Airways, Inc., and Transcontinental & Western Air, Inc. for reconsideration of order of consolidation; denied request for oral argument by Transcontinental & Western Air, Inc.

No. 2552..... November 27, 1943  
Granted each air carrier serving Albany, N. Y., temporary exemption from the requirements of sections 238.3 and 238.5 of the Economic Regulations, insofar as they would prevent them from temporarily serving Albany, N. Y., through the use of Schenectady County Airport.

## Regulations

REGULATION 289..... December 15, 1943.  
EFFECTIVE December 15, 1943.

AMENDMENT No. 1 OF SECTION 238.6 OF THE ECONOMIC REGULATIONS (FORMERLY REGULATION 401-K-1)—TEMPORARY SUSPENSION OF SERVICE UNDER CERTIFICATES OF PUBLIC CONVENIENCE AND NECESSITY AUTHORIZING INTERSTATE AIR TRANSPORTATION

Section 238.6 of the Economic Regulations is hereby amended in its entirety to read as follows:

SECTION 238.6 OF THE ECONOMIC REGULATIONS—TEMPORARY SUSPENSIONS OF SERVICE BY AIR CARRIERS (EXCEPT ALASKAN AIR CARRIERS)

(a) *Service of Notice.* Prior to or coincident with the filing of any application for temporary suspension of service to or from any point named in any certificate of public convenience and necessity (hereinafter referred to as "Certificate"), the applicant, unless otherwise authorized by the Board, shall cause a notice of such filing together with a copy of the application to be served by personal service or registered mail upon:

(1) Each scheduled air carrier which regularly renders service to the point for which temporary suspension of service is sought.

(2) The chief executive of the city, town or other unit of local government at any such point located in the United States or any Territory or possession thereof.

(3) The Postmaster General (marked for the attention of the Second Assistant Postmaster General), if the applicant's Certificate authorizes the transportation of United States mail to or from such point.

(b) *Contents of Notice.* Such notice shall state that it is being served pursuant to section 238.6 of the Economic Regulations of the Civil Aeronautics Board and shall indicate the date upon which the application will be or is being filed.

(c) *Form and Contents of Application.* The application shall be entitled "Application for Order Authorizing Temporary Suspension of Service" and in addition to the specific relief requested, shall contain a list of the persons upon whom notice of the filing thereof was or is being served, and facts relied upon to establish that the temporary suspension of service for which application is made, is in the public interest. An executed original and nine copies of such application with a copy of the notice attached to each shall be filed with the Board.

(d) *Additional Service of Notice.* Action on the application may be withheld by the Board, in its discretion, pending proof of such additional service of notice by the applicant as the Board may direct.

(e) *Disposition.* The Board will grant such application if it finds that such temporary suspension of service is in the public interest. An order authorizing temporary suspension of service will be subject to revocation or amendment by the Board at any time.

(f) *Authorized Suspensions of Service.* Unless otherwise ordered by the Board, the holder of a Certificate shall not be required to file an application or obtain an order of the Board.

(1) for temporary suspension of service to a point named in such Certificate during such time as the air carrier operating certificate of the holder does not authorize service to such point through the airport and with the type of aircraft last regularly used by the holder to serve such point.

(2) in case of a point named in a Certificate issued pursuant to section 401 (d) or section 401 (e) (2) of the Act and which has never regularly been served by the holder after the date of issuance of the Certificate, for temporary suspension of service to such point during such time as the air carrier operating certificate of the holder does not authorize service to such point through any airport convenient thereto with any type of aircraft then regularly being used (or, if the holder is not operating, with any type of aircraft proposed to be used) by the holder for scheduled operations between other points named in such Certificate, or

(3) in the case of a point named in a Certificate issued pursuant to section 401 (e) (1) of the Act, for continued temporary suspension of service to such point if such service was suspended during the thirty days immediately preceding July 31, 1939.

With respect to any such point the Board may by order at any time revoke or amend the authority conferred on the holder of a Certificate by this paragraph (f).

(g) *Temporary Interruptions of Service.* The temporary interruption of service to or from a point named in a Certificate caused by adverse weather conditions, or by other conditions which the holder could not reasonably have been expected to foresee or control, shall not be deemed to constitute a temporary suspension of service within the meaning of this Regulation or of the terms, conditions or limitations of such Certificate.

(h) *Inapplicability.* This regulation shall not apply to Alaskan Air Carriers.

#### Regulation 290----- December 15, 1943

EFFECTIVE December 15, 1943

#### AMENDMENT NO. 2 OF SECTION 292.2 OF THE ECONOMIC REGULATIONS—ALASKAN AIR CARRIERS

Paragraph (c) of Section 292.2, as amended, of the Economic Regulations is hereby amended by striking from the first sentence thereof the following:

"Section 238.6, Temporary Suspension of Service".

#### Regulation 291----- November 16, 1943

EFFECTIVE November 16, 1943

Each person who is listed in the records of Parks Air College or one of its affiliated schools as a trainee in an experimental course of specialized dual flight instruction is hereby authorized to make one solo flight while holding an airman certificate consisting solely of a medical certificate issued by an authorized medical examiner of the Administrator showing that such person meets the physical standards prescribed in section 29.12 of the Civil Air Regulations: *Provided*, That

(a) such person adheres to all the Civil Air Regulations except as above provided;

(b) the name and address of each such person is submitted in duplicate to the Civil Aeronautics Board prior to the solo flight;

(c) the solo flight is made within sight of and under the personal supervision of a certificated flight instructor.

This special Civil Air Regulation shall terminate May 15, 1944.

## New Equipment Approved

The CAA has approved two new types of propellers and has also approved five new models of previously accepted propeller types. Data on these follow:

### New Types

U. S. Propellers; 96LG; wood; 96 in. diameter; 83 in. pitch; 220 hp. 1925 rpm. (Type Certificate No. 798, October 28, 1943)

Gwinn-Stone; GS1-0, GS1-2, GS1-4, GS1-6; wood; 72 in., 70 in., 68 in. and 66 in. diameter, respectively; 48 in. pitch; 65 hp. 2350 rpm. (Type Certificate No. 799, October 30, 1943)

### New Models

Banks-Maxwell; 30, 30-2, and 30-4; wood; 76 in., 74 in. and 72 in. diameter, respectively; 48 in. to 40 in. pitch; 65 hp. 2350 rpm. (Type Certificate No. 795, November 3, 1943)

Banks-Maxwell; 34; wood; 70 in. diameter; 48 in. to 34 in. pitch; 80 hp. 2700 rpm. (Type Certificate No. 795, November 3, 1943)

Sensenich; 66CA; wood; 66 in. diameter; 66 in. to 63 in. pitch; 155 hp. 2930 rpm and/or 130 hp. 3200 rpm. (Type Certificate No. 765, November 4, 1943)

Sensenich; 72HAS; wood; 72 in. diameter; 67 in. to 65 in. pitch; 235 hp. 3000 rpm. (Type Certificate No. 538, November 17, 1943)

Hamilton Standard; 23D 3-blade propeller with 6459A-O, 6460A-O, 6511A-O or 6512A-O blades; steel hub and aluminum alloy blades; 11 ft. 7 in. to 9 ft. 7 in. diameter; hydraulically controllable (feathering); 850 hp. 1800 rpm. (Type Certificate No. 719, November 27, 1943)

#### Regulation 252----- December 1, 1943

EFFECTIVE December 1, 1943

Notwithstanding section 40.2611 (b) of the Civil Air Regulations any first pilot listed in the Eastern Air Lines air carrier operating certificate on November 1, 1943, who is qualified as competent to operate an aircraft in scheduled transportation between Richmond, Va., and Atlanta, Ga., on November 1, 1943, may pilot aircraft in scheduled transportation for said carrier into and out of Memorial Airport, Spartanburg, S. C., upon furnishing evidence satisfactory to the Administrator showing that the pilot is thoroughly familiar with the form and conditions of the airport and with the location and nature of any obstructions in the vicinity.

#### Amendment 61-13-- December 1, 1943

EFFECTIVE December 1, 1943

Part 61 of the Civil Air Regulations has been amended by adding a new section to read as follows:

61.797 *Marking emergency exits.* Emergency exits of aircraft carrying passengers shall be clearly marked as such in letters not less than  $\frac{3}{8}$  inch high with luminous paint, such markings to be located either on or immediately adjacent to the pertinent exit and readily visible to passengers. Location and method of operation of the handles shall be marked with luminous paint.

#### Amendment 61-14-- November 22, 1943

EFFECTIVE November 22, 1943

Effective November 22, 1943, the effective date of section 61.797, Amendment 61-13, adopted October 22, 1943, is changed from December 1, 1943, to January 1, 1944.

## Circle Rules Are Different At Some Airports

Authority to modify the left-hand circle rule for aircraft over landing areas has been transferred from the Civil Aeronautics Board to the Administrator of Civil Aeronautics (amendment 60-3 to sec. 60.3301 CAR). This change permits quicker action when the multiplicity of war-training fields with their problem of overlapping traffic patterns, or the sudden establishment of restricted areas adjacent to air fields makes immediate deviation from standard practice expedient.

It is now, more than ever, a vital responsibility of all pilots to keep themselves continuously informed as to the traffic flow above all landing areas which they approach within three miles while flying under 1,500 feet.

The Administrator may authorize deviations from the left-hand circle rule only when he finds it is required in the interest of safety. Such changes in standard procedure are published in the next possible "Weekly Notice to Airmen," and they are posted at all fields where the CAA teletype and communications systems are based. It is every pilot's responsibility to follow these sources of information carefully. But any such disseminating agency has, of necessity, certain time lags. This makes it imperative for any pilot approaching any field to keep alert to all indications of traffic movement in the air or on the ground—and by observation, tower communication, or other signals, supplement his information concerning conditions at the field in question.

The military, having complete control over the fields which they own or lease, have been able to work out signal systems for indicating what the landing rule is at any given time. The Navy uses colored balls, and the Army uses a ground tee with a bent arm as indicators. Civilian fields have no standardized signal system as yet, making eternal vigilance the only safety insurance in this regard.

## Air Carrier Audits

No strenuous objections have been raised to a proposed economic regulation which would require that the results of any public audit of an air carrier's accounts be made available to the Civil Aeronautics Board. The proposed regulation was recently circulated as a draft release to all interested persons.

## Revised CAR's on Sale

Two CAR's, "Mechanics Certificates" (Part 24) and "Air Traffic Rules" (Part 60) containing all amendments up to July 1, 1943, are on sale at the Superintendent of Documents, Government Printing Office, Washington, D. C. Part 24 is 5 cents; Part 60 is 10 cents.



# STATUS OF AIR REGULATIONS

## Regulations as of December 1, 1943

### HOW TO OBTAIN PARTS, AMENDMENTS, AND MANUALS

THOSE PARTS AND MANUALS ON WHICH A PRICE IS LISTED IN THE TABULATION WHICH FOLLOWS ARE ON SALE AT THE GOVERNMENT PRINTING OFFICE (SHOWN AS GPO IN TABLE), AND ARE NOT AVAILABLE FOR FREE DISTRIBUTION FROM THE CAA.

The Government Printing Office is the official sales agency for all government publications and is separate and distinct from the CAA and the Department of Commerce. The rules of the Superintendent of Documents require that remittances be made in advance of shipment of publications, either by coupons, sold in sets of 20 for \$1 and good until used, or by check or money order payable to the Superintendent of Documents, Government Printing Office. Currency is sent at sender's risk. Postage stamps, foreign money, and smooth coins are not acceptable. A discount of 25 percent is allowable to book dealers and quantity purchasers of 100 or more publications, on condition that the purchasers will adhere to the public sales price set by the Superintendent of Documents and that publi-

cations shall not be overprinted with any advertising matter.

Eventually, all Parts and Manuals will be placed on sale; meanwhile, those not yet on sale (carrying remark, "Order from CAA only") may be obtained without charge from the CAA upon demonstration of valid interest on the applicant's part.

The following tabulation carries in the right-hand column the numbers of all effective amendments to each Part and Manual issued subsequent to its publication. Parts and Manuals obtained from the CAA will include all effective amendments, but amendments for Parts and Manuals purchased from GPO must be requested separately from the CAA. When requesting amendments from the CAA, please be sure to state Part numbers for which they are desired.

ALL AMENDMENTS TO THE REGULATIONS, AND NOTICE OF NEW PARTS AND MANUALS ARE PRINTED IN THE CIVIL AERONAUTICS JOURNAL, AS RELEASED.

Bound volumes of the complete Civil Air Regulations are no longer available. Parts and amendments are punched for filing in standard three-ring binders.

For your guidance we have listed the Parts and Manuals applicable to the various airman certificates issued.

### Pilots:

Parts 01, 20, 60, 501, 503, and Manual 60. Airline Transport Pilots: Parts 01, 04, 21, 27, 40, 60, 61, 98, 501, 503, and Manuals 04 and 60.

### Lighter-Than-Air Pilots:

Parts 01, 22, 60, 501, 503, and Manual 60. Aircraft Mechanics:

Parts 01, 04, 15, 18, 24, 501, 503, section 60.32, and Manuals 04, 15, and 18.

### Aircraft Engine Mechanics:

Parts 01, 04, 13, 14, 18, 24, 501, 503, and Manuals 04, 14, and 18.

### Parachute Technicians:

Parts 15, 25, 54, 60, and Release 144.

### Air-Traffic Control-Tower Operators:

Parts 26, 60, and Manual 60.

### Aircraft Dispatchers:

Parts 27, 40, 60, 61, and Manual 60.

### Ground Instructors (rating in Civil Air Regulations):

Parts 01, 20, 51, 60, 501, 503, and Manual 60.

### PARTS CANCELED AND UNASSIGNED

Canceled Parts 00 and 03 now incorporated in Part 501; canceled Part 23 now incorporated in Part 51. Parts 90-96, inclusive, canceled. All other Part numbers not shown are unassigned.

## Civil Air Regulations

### Aircraft

PART NO.	TITLE	DATE	REMARKS	PRICE	EFFECTIVE AMENDMENTS
01	AIRWORTHINESS CERTIFICATES.....	10-15-42	On sale at GPO.....	\$0.05	
02	TYPE AND PRODUCTION CERTIFICATES.....	3-1-41	On sale at GPO.....	.05	
04	AIRPLANE AIRWORTHINESS.....	11-1-43	On sale at GPO.....	.15	
13	AIRCRAFT ENGINE AIRWORTHINESS.....	8-1-41	On sale at GPO.....	.05	
14	AIRCRAFT PROPELLER AIRWORTHINESS.....	7-15-42	On sale at GPO.....	.05	
15	AIRCRAFT EQUIPMENT AIRWORTHINESS.....	11-15-40	In stock; order from CAA only.....	-----	15-1, 15-2.
16	AIRCRAFT RADIO EQUIPMENT AIRWORTHINESS.....	2-13-41	On sale at GPO.....	.05	
18	MAINTENANCE, REPAIR, AND ALTERATION OF CERTIFICATED AIRCRAFT AND OF AIRCRAFT ENGINES, PROPELLERS, AND INSTRUMENTS.....	9-1-42	On sale at GPO.....	.05	

### Airmen

20	PILOT CERTIFICATES.....	9-1-42	On sale at GPO.....	\$0.10	20-1, thru 20-5, Reg. Ser. 242, 247.
21	AIRLINE TRANSPORT PILOT RATING.....	10-1-42	On sale at GPO.....	.05	21-1, thru 21-3, Reg. Ser. 278.
22	LIGHTER-THAN-AIR PILOT CERTIFICATES.....	10-15-42	On sale at GPO.....	.05	Reg. Ser. 247.
24	MECHANIC CERTIFICATES.....	7-1-43	On sale at GPO.....	.05	
25	PARACHUTE TECHNICIAN CERTIFICATES.....	1-21-43	In stock; order from CAA only.....	-----	25-1.
26	AIR-TRAFFIC CONTROL-TOWER OPERATOR CERTIFICATES.....	7-1-42	On sale at GPO.....	.05	26-1, 26-2.
27	AIRCRAFT DISPATCHER CERTIFICATES.....	10-1-43	On sale at GPO.....	.05	
29	PHYSICAL STANDARDS FOR AIRMEN.....	6-1-42	On sale at GPO.....	.05	

### Air Carriers

40	AIR CARRIER OPERATING CERTIFICATION.....	11-1-42	On sale at GPO.....	\$0.10	40-1, 40-2.
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### Air Agencies

50	FLYING SCHOOL RATING.....	11-1-40	On sale at GPO.....	\$0.05	57, 113, 50-3, Reg. No. 215. <sup>1</sup>
51	GROUND INSTRUCTOR RATING.....	7-1-42	On sale at GPO.....	.05	
52	REPAIR STATION RATING.....	10-1-42	On sale at GPO.....	.05	
53	MECHANIC SCHOOL RATING.....	8-1-42	On sale at GPO.....	.05	
54	PARACHUTE LOFT CERTIFICATES AND RATINGS.....	1-21-43	In stock; order from CAA only.....	-----	

### Air Navigation

60	AIR-TRAFFIC RULES.....	7-1-43	On sale at GPO.....	\$0.10	60-1 thru 60-3.
61	SCHEDULED AIR-CARRIER RULES.....	10-15-42	Out of stock.....	.10	61-1 thru 61-13.
66	FOREIGN AIR-CARRIER REGULATIONS.....	1-15-42	On sale at GPO.....	.05	

### Miscellaneous

97	RULES OF PRACTICE GOVERNING SUSPENSION AND REVOCATION PROCEEDINGS.....	10-1-42	In stock; order from CAA only.....	-----	
98	DEFINITIONS.....	10-15-42	On sale at GPO.....	\$0.05	
99	MODE OF CITATION OF REGULATIONS.....	11-15-40	In stock; order from CAA only.....	-----	

<sup>1</sup> No copies available. (Waiver of requirements.) Consult CAA inspector for specific provisions of this amendment.



# Regulations of the Administrator

PART NO.	TITLE	DATE	REMARKS	PRICE	EFFECTIVE AMENDMENTS
501	AIRCRAFT REGISTRATION CERTIFICATES.....	2-31-43	In stock; order from CAA only.....	-----	
503	RECORDATION OF AIRCRAFT OWNERSHIP.....	3-31-43	In stock; order from CAA only.....	-----	
510	GENERAL REGULATIONS, WASHINGTON NATIONAL AIRPORT.	9-26-41	In stock; order from CAA only.....	-----	
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600	DESIGNATION OF CIVIL AIRWAYS.....	3-1-42	Not published <sup>1</sup> .....	-----	1 through 34. <sup>1</sup>
601	DESIGNATION OF AIRWAY TRAFFIC CONTROL AREAS, ETC.	1-15-42	Not published <sup>1</sup> .....	-----	1 through 52. <sup>1</sup>

## Civil Aeronautics Manuals

04	AIRPLANE AIRWORTHINESS.....	2-1-41	On sale at GPO.....	\$0.50	Release 50, 97, <sup>2</sup> 105, <sup>2</sup> 117, <sup>2</sup> 140. <sup>2</sup>
14	AIRCRAFT PROPELLER AIRWORTHINESS.....	12-1-38	In stock; order from CAA only.....	-----	
15	AIRCRAFT EQUIPMENT AIRWORTHINESS.....	7-1-38	On sale at GPO.....	.10	
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18	MAINTENANCE, REPAIR, AND ALTERATION OF CERTIFICATED AIRCRAFT AND OF AIRCRAFT ENGINES, PROPELLERS, AND INSTRUMENTS.	6-1-41	On sale at GPO.....	.50	
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60	AIR TRAFFIC RULES.....	8-1-43	On sale at GPO.....	.15	

<sup>1</sup> See Air Navigation Radio Aids.

<sup>2</sup> Only pertinent pages furnished.

## Air Routes

(Continued from page 167)

plans for African and European routes. Certificated to operate from New York City to Bathurst on the west African coast via Port of Spain and Belem, the carrier has asked for extension of this southern route to Capetown (Union of South Africa) from the coterminals of New York City, Boston, Chicago, and Washington, D. C., via San Juan, Port of Spain, Belem, and Natal. Another route is requested from Natal (Brazil) to Rome, by way of Dakar, Casablanca, and Algiers. A proposed extension of American Export's present New York City-Foyines (Eire) route to Bombay (India) would meet the southern route at Rome, intermediate points being Paris, Rome, Athens, and Cairo. A branch from Athens to Sevastopol (Russia) is also planned.

## Steamship Companies

The five steamship companies which have applied for authorization to conduct supplementary air service are the Moore-McCormack Lines, United Fruit, Grace Line, Inc., International Airways, and Waterman Airlines.

The Moore-McCormack Lines asks routes from New York City to Buenos Aires through the West Indies and around the eastern coast of South America. United Fruit has requested air routes in the Caribbean area which will supplement its already established steamship and railway service and will provide more rapid transportation for all kinds of high-class freight, express and passenger travel. The Grace Line, which has operated steamship service between the United States and Central and South America for 70 years, has applied for routes from New York City to Balboa and the Caribbean area in order to coordinate and integrate its service with air travel.

## Airport Builders' Manual Is Issued

Problems which confront airport builders—site selection, grading, drainage, paving—are taken apart and then put together again, solved, in a runway and flight-strip construction manual just published by Public Roads Administration.

Written in language which any layman can understand, and so organized that the reader is taken step by step from the consideration of airport sites to the selection and sowing of turf, the manual is available from the Superintendent of Documents, Government Printing Office, Washington, at \$1.00 per copy.

Items of equipment for the various steps in runway layout and construction are suggested. The manual also covers the effect of proper grading on durability of pavement, the value of obtaining "soil profiles" and of determining "soil textures." Of drainage it states "Drainage may become a major factor in the cost of airport construction and a careful study of it should be made when comparing proposed sites."

In 514 pages, with up-to-the-minute illustrations, the book is entitled "Principles of Highway Construction as Applied to Airports, Flight Strips and other Landing Areas for Aircraft." Six chapters deal with selection of site, grading, drainage, flexible bases and surfaces, rigid pavements, and use of turf on airports.

## New Manual 60 Available

"Air Traffic Rules" (Manual 60) a 39-page, illustrated booklet amended to August 1, 1943, is on sale for 15 cents a copy at the Superintendent of Documents, Government Printing Office, Washington, D. C.

## Air School Applies For Pick-Up Service

The Parks Air College, East St. Louis, Ill., now operating a chain of five aviation schools, has applied to the Civil Aeronautics Board for permission to establish air service out of St. Louis, Kansas City, Indianapolis, Chicago, and Tulsa over 35 routes.

The applicant proposes mail and property service by both landing and pick-up methods. Should the carrying of passengers during pick-up operations prove feasible, this type of service is also requested. Use of twin-engine aircraft of the conventional type—probably the Beechcraft Model 18-S—was indicated in the application.

The Parks Air College, now giving primary flight training to army air force cadets, has operated an aviation school for 16 years for training of personnel for all phases of the aviation industry, particularly commercial air transport.

## Canada's Weather Still In Code, Pilots Warned

While the ban on broadcasting plain English weather reports was lifted last month for all CAA radio stations, coded broadcasts of Canadian weather continue. Accordingly, pilots making flights during which they will need reports on Canadian weather are responsible for obtaining the proper code forms prior to departure.

"Alaco-Airmetco" (aircraft landing code and aircraft meteorological code) will continue in effect in Canada west of Montreal. East of Montreal a Canadian combination code will be used.

Code forms are still available from any Weather Bureau or CAA office or from company or military operations offices.

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